

PATENT COOPERATION TREATY

REC'D 22 APR 2005

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From the
INTERNATIONAL SEARCHING AUTHORITY

To:

see form PCT/ISA/220

PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY (PCT Rule 43bis.1)

Date of mailing
(day/month/year) see form PCT/ISA/210 (second sheet)

Applicant's or agent's file reference
see form PCT/ISA/220

FOR FURTHER ACTION
See paragraph 2 below

International application No.
PCT/GB2005/000078

International filing date (day/month/year)
12.01.2005

Priority date (day/month/year)
17.01.2004

International Patent Classification (IPC) or both national classification and IPC
G01H9/00, G01P15/093, G01V1/18

Applicant
QINETIQ LIMITED

1. This opinion contains indications relating to the following items:

- ☒ Box No. I Basis of the opinion
- ☐ Box No. II Priority
- ☒ Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
- ☐ Box No. IV Lack of unity of invention
- ☒ Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
- ☐ Box No. VI Certain documents cited
- ☐ Box No. VII Certain defects in the international application
- ☐ Box No. VIII Certain observations on the international application

2. FURTHER ACTION

If a demand for international preliminary examination is made, this opinion will usually be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA"). However, this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of three months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the ISA:



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**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING AUTHORITY**

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Box No. I Basis of the opinion

1. With regard to the **language**, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any **nucleotide and/or amino acid sequence** disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material:
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material:
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing:
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. III Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

The questions whether the claimed invention appears to be novel, to involve an inventive step (to be non obvious), or to be industrially applicable have not been examined in respect of:

☐ the entire international application,

☒ claims Nos. 18,19

because:

☐ the said international application, or the said claims Nos. relate to the following subject matter which does not require an international preliminary examination (*specify*):

☒ the description, claims or drawings (*indicate particular elements below*) or said claims Nos. 18,19 are so unclear that no meaningful opinion could be formed (*specify*):

see separate sheet

☐ the claims, or said claims Nos. are so inadequately supported by the description that no meaningful opinion could be formed.

☐ no international search report has been established for the whole application or for said claims Nos.

☐ the nucleotide and/or amino acid sequence listing does not comply with the standard provided for in Annex C of the Administrative Instructions in that:

the written form

☐ has not been furnished

☐ does not comply with the standard

the computer readable form

☐ has not been furnished

☐ does not comply with the standard

☐ the tables related to the nucleotide and/or amino acid sequence listing, if in computer readable form only, do not comply with the technical requirements provided for in Annex C-*bis* of the Administrative Instructions.

☐ See separate sheet for further details

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**Box No. V Reasoned statement under Rule 43b/s.1(a)(I) with regard to novelty, inventive step or
Industrial applicability; citations and explanations supporting such statement**

1. Statement

Novelty (N)	Yes: Claims	13
	No: Claims	1-12,14-17
Inventive step (IS)	Yes: Claims	
	No: Claims	1-17
Industrial applicability (IA)	Yes: Claims	
	No: Claims	1-17

2. Citations and explanations

see separate sheet

**WRITTEN OPINION OF THE
INTERNATIONAL SEARCHING
AUTHORITY (SEPARATE SHEET)**

International application No.

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Re Item III

Non-establishment of opinion with regard to novelty, inventive step and industrial applicability

Independent claims 18,19 are only referring to drawings. The claims do not contain any technical features and therefore neither a meaningful search nor an examination could be carried out for these claims.

Re Item V

Reasoned statement with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

Reference is made to the following documents:

- D1: WO 03/081186 A (QINETIQ LIMITED; THOMAS, SEAN, DORMER; HILL, DAVID, JOHN; NASH, PHILIP) 2 October 2003 (2003-10-02)
- D2: US-A-4 495 411 (RASHLEIGH ET AL) 22 January 1985 (1985-01-22)
- D3: US-A-4 799 752 (CAROME ET AL) 24 January 1989 (1989-01-24)

1. Novelty

The present application does not meet the criteria of Article 33(1) PCT, because the subject-matter of claims 1-12,14-17 is not new in the sense of Article 33(2) PCT.

1.1 The document D1 (see page 2, line 18 - page 3, line 3; page 6, line 6 - page 8, line 9; figures) discloses (the references in parentheses applying to this document)
a fibre optic accelerometer comprising the features of claim 1:
- a seismic mass (23) coaxially constrained within a cylinder (12) of compliant material;
said cylinder (12) being circumferentially wound with optical fibre (11).
Claim 1 is not novel.

1.2 The feature of the other "independent" apparatus claim 14, of an optical

interferometer in combination with said accelerometer is also known from D1 (see figures 8,9). The claim is also not novel.

1.3 The document D1 (see passages as cited above) further discloses all features of the dependent apparatus claims 2-13. These claims are also not novel.

1.4 The independent method claims 15,16 and the dependent method claim 17 comprise features corresponding to the aforementioned apparatus claims. The claims are also not new.

2. Clarity / Conciseness

The claims lack clarity and conciseness Article 6 PCT:

2.1 The claims describe desired functions of the claimed apparatus without specifying the structural features by which the apparatus would be enabled to function in the desired way:

- claim 2: "accelerometer in which compression of .. cylinder increases stress in .. optical fibre";
- claims 11,12: "arranged in operation to bear"..;
- claim 13: ... surfaces of mass and cylinders: "shaped so as to prevent cylinders from deforming inwardly under axial compression";
- claim 15: axial displacement of mass deforming the cylinder "so as to vary the stress induced in the optical fibres".

The claims lack clarity.

2.2 Claims also comprise vague expressions whose meaning is not immediately clear:

- claim 3: "seismic mass being *surmounted* with a disc shaped portion";
- claim 8: "base plate being *integral with a platform / or structure (?)*".

The claims lack clarity.

2.3 The groups of apparatus claims 1,14 and method claims 15,16 each have been drafted as separate independent claims although they appear effectively to the same subject-matter and to differ from each other only with regard to the definition of the subject-

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matter for which protection is sought ..and/or.. in respect of the terminology used for the features of that subject-matter. The aforementioned claims therefore lack conciseness and as such do not meet the requirements of Article 6 PCT.

3. Inventive Step

Although the above mentioned lack of clarity of the remaining claim 13 does not allow to give a final opinion with respect to inventive step of this claim, the documents D2, D3 (see passages as cited in the search report) also disclose devices which deform outwardly under axial compression.

The claim is thus not inventive in the sense of Article 33(3) PCT.

4. Further remarks

- The independent claims are not in the two-part form in accordance with Rule 6.3(b) PCT, with those features known in combination from the prior art (document D1) being placed in the preamble (Rule 6.3(b)(I) PCT) and with the remaining features being included in the characterising part (Rule 6.3(b)(ii) PCT).
- The features of the claims are not provided with reference signs placed in parentheses (Rule 6.2(b) PCT).

5. Industrial Applicability

The claimed invention meets the requirement of Article 33(4) PCT of industrial applicability.